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Colombian Agricultural Policy

by JOHN A. HOPKINS*

Colombia's economy is largely agricultural. Nearly two-thirds of its 10 million persons live either on farms or in small rural villages. Population is increasing at an estimated rate of about 2 percent a year and shows a drift toward the larger cities, where light industries have expanded materially during recent years. There are still undeveloped areas of potential agricultural importance.

In 1940 the Colombian Government adopted a plan for the development of the national economy, including agriculture as well as other industries. High protective tariffs had been in effect since 1931. But the laws of 1940 gave the Government wide additional powers, including authority to impose quotas or prohibit imports of products that could be raised within the country. They also reinforced existing agencies for economic intervention and set up several new ones.

In the postwar period Colombia will need farm machinery, fertilizers, automobiles, refrigerators, cotton, fats, wheat, and various semiluxury goods. Under the policy just mentioned, how much of these will Colombia purchase from the United States? And what commodities will be sold in order to pay for such purchases? Colombia has been the second most important source of United States imports of coffee and an important source of bananas. It has also been one of the more important markets for United States exports. Consequently, these are questions of direct practical importance, not only to farmers, but also to industrialists and to United States consumers in general.

Rough estimates prepared by the Colombian Department of Agriculture for 1944 indicate that about 5,000,000 acres, or nearly 2 percent of the total area of the country, are in crops. The largest cultivated area is devoted to coffee. Corn (maize) is second in acreage. This is followed, in area planted, by yuca, sugarcane, plantains, and wheat, in the order named. In terms of estimated value of annual production, coffee is far ahead of any other crop, representing nearly 40 percent of total crop value (table 1). Coffee is followed in value by sugar, including panela (a brown, loaf sugar) and molasses. Potatoes rank third in crop value and corn fourth.

Of these crops only coffee is of importance as an export commodity; cotton, wheat, and cacao are imported to satisfy the needs of the country. Rice and sugar are imported in some years and exported in others. Most of the import crops are well down the list in terms of value of domestic production. The production figures, except for coffee and sugar, must be considered as only approximate, since there has never been an agricultural census.

Among the import crops the production of rice, cacao, and white sugar expanded by about two-thirds

from 1938 through 1944 (table 2). From 1939 through 1944, coffee production increased by 24 percent, and wheat and cotton production by 16 and 21 percent, respectively. Coffee is followed in value of annual production by cattle. Approximately 1,200,000 head are slaughtered per year at the present time. This figure has been increasing by 4 or 5 percent per year. The average price per head for all cattle sold in the Medellín market (largest in the country) was \$58.14 (U. S. currency) in 1944. This, however, included some feeder stock. Fat cattle sold for from \$62.70 to \$79.80. On this basis the probable value of all cattle slaughtered was somewhere between \$70,000,000 and \$85,000,000. The combined value of the annual production of cattle plus principal crops, therefore, was about \$315,000,000 in 1944. Coffee, the principal export crop, accounted for about 30 percent of the total. The import crops, if sugar is included, amounted to approximately 20 percent; if sugar is excluded, the remaining four import crops mentioned account for only 8 percent of national agricultural production.

Development of Agricultural Policy

Programs to facilitate agricultural expansion are of four kinds: (1) A well-defined program for granting free land from the public domain to any settler who wants to clear it for agricultural purposes and

TABLE 1.—Estimated area planted, production, and value of principal Colombian crops, 1944

Crop	Area	Production		
		Unit	Quantity	Value
	1,000 acres		1,000's	1,000 dollars ¹
Coffee.....	1,502	132-pound bags	5,533	95,792
Sugarcane.....	398	Short tons.....	781	37,886
Potatoes.....	158	Bushels.....	12,676	27,659
Corn.....	1,349	do.....	21,452	25,032
Wheat.....	284	do.....	3,306	12,367
Rice.....	180	Pounds.....	149,890	9,343
Plantains.....	304	Short tons.....	339	8,829
Yuca.....	472	Pounds.....	1,051,594	5,465
Beans.....	198	do.....	74,956	3,922
Tobacco.....	35	do.....	28,690	3,775
Cotton.....	124	Bales.....	24	2,692
Cacao.....	40	Pounds.....	16,296	2,540
Others.....	156			3,973
Total ⁴	5,200			239.

¹ The Colombian peso is equivalent to U. S. \$0.573.

² White or centrifugal sugar only; panela and molasses not included.

³ Includes panela and miel or molasses.

⁴ Includes some, but not all, minor crops.

Source: Colombian Department of Agriculture.

*Office of Foreign Agricultural Relations.

TABLE 2.—Estimated production¹ of selected crops in Colombia, 1938-44

Year	Coffee	Rice ²	Wheat ³	Cotton ⁴	Cacao ⁵	Copra ⁵	Sesame ⁵	Sugar ⁴
	1,000 bags of 132 pounds	Million pounds	1,000 bushels	1,000 bales (7)	1,000 pounds	1,000 pounds	1,000 pounds	1,000 short tons
1938	4,496	89			9,918	3,157	961	52
1939	4,444	89		20	9,484	5,595	1,047	54
1940	4,432	113		13	11,656	3,624	1,393	54
1941	4,761	132		18	12,608	2,890	2,019	72
1942	5,488	142	4,206	23	16,616	4,855	6,552	63
1943	5,283	143	3,732	20	16,288	6,378	13,613	74
1944	5,533	150	3,306	24	16,296	9,182	5,509	81

¹ Figures must be considered merely as approximations, except for coffee and sugar, since there is no crop-reporting service and has never been an agricultural census.

² Polished rice. Data from Sección de Comercio e Industrias, Ministerio de Economía Nacional, except for 1944 estimate, which was provided by Departamento de Agricultura.

³ Data for 1942 from Sección de Comercio e Industrias; estimates for 1943 and 1944 from Departamento de Agricultura.

⁴ Data for calendar years from Ministerio de Economía Nacional; cotton converted to bales of 478 pounds.

⁵ Annual consumption of Colombian crop, from Ministerio de la Economía Nacional.

⁶ Estimated.

⁷ Data not available.

⁸ From the Federación Nacional de Cafeteros.

⁹ Preliminary.

for making limited amounts of credit available to such settlers, once they are established; (2) research and extension programs of the National Departments of Agriculture and of Livestock, both of which are divisions of the Ministry of National Economy; (3) a group of Government-intervention programs under the *Caja Agraria*, the *Fomento Industrial*, the Wheat Growers Association, and the National Supply Institute (*Instituto Nacional de Abastecimientos*), which are charged with providing credit, importing and selling farm equipment at favorable rates, establishing storage facilities, manufacturing fertilizer, and so on; (4) various controls over imports, including protective tariffs, import quotas on certain agricultural products, a regulation aimed at the exclusion of lard imports, and controls over foreign exchange. These will be discussed in connection with the specific commodities whose production they are supposed to stimulate.

The personnel of the agricultural and livestock departments is relatively small at present. Adequate financial provision is promised, however, for these agencies under a 5-year plan adopted in December 1944. Little work has been done in agricultural economics, and virtually no trained personnel is available for this. Few studies have been made of the economics of agricultural production or trade. The policy with regard to foreign trade in agricultural products has been largely a spontaneous growth. Demands for Government action in Colombia, as elsewhere, have come largely from special-interest groups. Government agencies have been able to make but little critical analysis of such demands. Consequently, the resulting policy is aimed simultaneously at discouraging imports and encouraging exports. Imports are approved or encouraged only of those products (chiefly industrial) which are not produced in Colombia, or the production of which is considered to be at a great disadvantage compared to

that abroad. Foremost in this latter type of goods may be mentioned agricultural equipment, automobiles, and industrial machinery.

Three Epochs of Development

Government agricultural policy in Colombia during the past 20 years falls naturally into three rather distinct epochs. Each was strongly influenced by world conditions as well as by the general economic situation within the country.

LOW TARIFFS

The first was a period of relatively low agricultural tariff protection from 1926 to 1931. This was inspired by the rising prices of the 1920's and the failure of Colombian production to keep up with growing demand. Import duties were lowered materially under a so-called "emergency" act, Law 3 of 1926.

HIGH PROTECTION

The second period lasted from 1931 to 1940. It was characterized by high tariff protection but with little Government intervention of other types. The depression of the early 1930's brought a change in outlook regarding foreign trade. The decline in Colombian farm prices after 1929 was blamed to a large degree on imports. Consequently, the Government turned sharply toward protection. Duties on principal agricultural import products were doubled under Laws 4 and 62 of 1931 and Decrees 1706 and 2194 of the same year (table 3). For the most part, these same rates have remained in effect to the present time. Aside from stiff import duties, there was little Government intervention in import crops, and no very positive programs had been organized on export crops up to 1940. In fact, Colombia at this time was a deficit country with regard to several important food products. Therefore, a

high tariff policy appeared to give all the assurance of high prices that farmers demanded.

TABLE 3.—Colombian import duties on specified agricultural products, 1931 and 1945

Commodity	1931		1945	
	<i>Pesos</i> ¹ per kilo	<i>Cents per</i> pound	<i>Pesos</i> ¹ per kilo	<i>Cents per</i> pound
Rice.....	0.08	3.5	0.68	2.1
Wheat.....	.08	² 210.0	.08	² 124.1
Flour.....	.18	7.9	.18	4.7
Corn.....	.10	² 245.4	.10	² 144.8
Barley, hulled.....	.03	² 63.1	.03	² 37.2
Beans.....	.10	4.4	.10	2.6
Potatoes.....	.06	² 158.0	.06	² 93.1
Sugar.....	.20	8.8	.20	5.2
Cacao beans.....	.26	11.4	.26	6.7
Cotton fiber.....	.10	4.4	.14	3.6
Cattle, live.....	³ 10.00	⁴ 1.0	³ 10.00	⁴ .6
Hogs, live.....	free	free	⁵ 10.00	⁶ .3
Beef.....	.60	26.3	7.45	11.6
Ham and sausage.....	.80	35.1	7.80	20.7
Lard.....	.36	13.1	7.30	7.6
Butter.....	.80	35.1	7.80	20.7

¹ The Colombian peso in 1931 was equivalent to \$0.966 and in 1945 to \$0.57.

² Per bushel.

³ Per head.

⁴ Assuming a weight of 992 pounds (450 kilos) per head.

⁵ Rate per head for fat hogs. Thin hogs, U. S. \$2.85 (5 pesos) per head. Hogs enter free if for breeding purposes.

⁶ Assuming a weight of 200 pounds per head.

⁷ On imports the following rates per kilo apply under the trade agreement with the United States: Beef, 30 centavos; ham and sausage, 50 centavos; lard, 15 centavos; potatoes, 5 centavos.

The depreciation of the value of the peso in terms of U. S. currency from 96.6 cents in 1931 to 56 or 57 cents in the late 1930's meant a substantial decline in the percentage protection afforded by these tariff rates. Thus, the Colombian import duty on rice was 8 centavos per kilo both in 1931 and in 1945, but when converted into terms of U. S. dollars it amounted to 3.5 cents per pound in 1931 but only 2.1 cents in 1945. At the same time, the related increase in Colombian prices of imported goods raised the peso price of the dollar, or other foreign exchange, with which to purchase them.

ECONOMIC PROGRAM OF 1940

The third epoch began in 1940 and has continued to the present time. World-wide discussion of economic planning during the 1930's, and particularly the examples of such agencies as the Agricultural Adjustment Administration in the United States, stimulated the development of a similar plan for Colombia. A series of some 10 or 12 laws and decrees was issued in June and July 1940. These set forth the Government's policy and its relationship to agriculture and industry. The general effect was to strengthen the barriers to agricultural imports and to put the Government in a position to intervene in the economic life of the country to a much greater degree than before.

Decree 1157 of June 18, 1940, formed the base of the new economic structure. It set up a general plan for economic development in industry, as well as in

agriculture, and had as its objective the stimulation of production and ultimate lowering of cost of basic materials. It established the Industrial Development Institute (*Instituto de Fomento Industrial*), and gave the Government authority to restrict imports of such commodities as cotton, vegetable oils, animal fats, wheat, rice, sugar, vegetables, or fruits that could be produced within the country. It also provided that no licenses for import of such products were to be issued in amounts exceeding the immediate needs of the country.

On the same day, June 18, Decree 1156 created a section in the *Caja de Crédito Agrario, Industrial, y Minero*, for the purpose of making medium- and long-term credit more easily and widely available to agriculture and other industries. Decree 1413 set forth a detailed list of crops whose production was to be stimulated by the Department of Agriculture and of the zones in which each one was to be encouraged. Decree 1414 listed the types and breeds of livestock to be encouraged by campaigns under the National Livestock Department and the regions in which these campaigns were to be carried out. Decrees 1456 and 1460 were designed to facilitate cooperation and the organization of agriculture and to reorganize the Colombian Agricultural Society.

During the same year there were also several other decrees regarding assistance to coffee growers, protection of forests and of public lands, drainage and irrigation, and so on.

Effects of the War

As far as agriculture is concerned, there has been no essential change in Colombian policy since the general economic plan of 1940. A number of new laws and decrees have been issued, but these have been intended chiefly to provide details of the 1940 plan or to deal with complicating circumstances encountered under war conditions. A Price Control Agency was established in the Ministry of Economy in an attempt to prevent excessive increases in retail prices. Price regulations directly affecting farmers have been designed to maintain floors under prices to producers, rather than ceilings, and the floors have been lifted from time to time. Other boards, such as the Foreign Exchange Control Board, were also set up to deal with wartime problems. These have touched farmers only incidentally.

The principal effects of the war have been to cut off or limit imports of a few agricultural products, such as copra, which is used to manufacture vegetable lard. Limited foreign supplies of sugar, rice, wheat, cacao, and some other products have made for

higher prices within Colombia. These have stimulated domestic production and have brought farm operators large profits during the war years.

Policies Regarding Principal Crops

Colombian policies and programs for various agricultural enterprises follow a general pattern. Nevertheless, these basic policies have had to be modified for each product. The applications of policy to individual commodities is particularly interesting, especially in the case of the two principal export crops, coffee and bananas, and the import crops of rice, wheat, cotton, fats, cacao, and sugar.

COFFEE¹

Coffee is the most important Colombian crop both in terms of total agricultural income and in foreign trade. In 1939, coffee represented 64 percent of the total value of Colombian exports, and in 1942 this figure rose to 84 percent. Production has increased continuously during the past 20 years. The crop in 1927 approximated 2,700,000 sacks of 132 pounds, 500,000 in 1930, 4,100,000 in 1935, 4,800,000 in 1941, and between 5,300,000 and 5,500,000 sacks per year during 1942-44. (See table 4.)

Prior to 1928 little, or no, Government supervision was exercised over coffee production or exportation. As the importance of the crop in the Colombian economy became greater, demand for official intervention increased. Therefore, in accordance with Law 76 of 1927, the National Federation of Coffee Growers was created. The purposes of this semi-official entity are to carry on active propaganda in favor of Colombian coffee, to encourage improved methods of production, to support domestic and foreign coffee prices, to secure higher standards of living for coffee workers, and to obtain and publish statistics on coffee prices and production. Warehouses and agencies are maintained in centers growing and distributing coffee. The Federation not only receives coffee for warehousing but may sell for the grower; ship, hull, and classify the product; and generally assist the grower in getting the best possible prices.

The Federation's operating funds have been obtained from a tax on coffee exports. The *Fondo Nacional de Café*, administered by the Federation for the general good of the industry, is obtained from taxes on foreign drafts cleared through the

Bank of the Republic. Until recently, income for this fund was also received from a tax against foreign exchange from coffee exports. On the Board which governs the Federation, the Government is represented by the Ministers of National Economy, Foreign Affairs, and Finance and by the managers of the Caja de Crédito Agrario of the Agricultural Mortgage Bank.

Wide fluctuations in world coffee prices have had devastating effects on the coffee industry. During and after World War I, New York prices for Manizales coffee fluctuated from 12 to 31 cents per pound. With the depression of the early 1930's, coffee prices dropped from 25 cents in 1929 to 11 cents in 1932. Temporary rises occurred, but at the outbreak of World War II in 1939 Manizales was less than 8 cents per pound.

Under these circumstances, emergency measures obviously were needed. Brazil had been destroying surplus coffee since 1931. Pan-American Coffee Conferences were called in 1936, 1937, and 1940. In 1940, the Inter-American Coffee Agreement was drawn up and became effective in April 1941.

Meanwhile, legislation² in 1940 established control over Colombian coffee exports, fixed basic domestic coffee prices, authorized issuance of bonds to set up the National Coffee Fund, and imposed new taxes for its maintenance. Decree 2080 provided that the Federation purchase those amounts of coffee which the domestic market could not absorb. Although Colombia's basic quota of 3,150,000 sacks was amended each year (reaching 5,562,916 sacks in the third quota year), the Federation was obliged to buy large amounts of coffee. Between October 1940 and March 1943 purchases amounted to 5,000,000 sacks.

TABLE 4.—Exports of coffee and bananas from Colombia, 1926-44

Period	Quantity		Value	
	Coffee	Bananas	Coffee	Bananas
Average:	1,000 bags	1,000 stems ¹	1,000 dollars	1,000 dollars
1926-30.....	2,687	9,744	74.086	7.206
1931-35.....	3,282	5,864	46.036	4.593
1936-40.....	4,107	7,231	50.086	4.557
Annual:				
1941.....	2,912	3,400	47.480	1.667
1942.....	4,309	296	82.582	162
1943.....	5,251	1	100.863	(²)
1944.....	4,923	529	94.360	285

¹ 50-pound stems.

² Less than \$500.

Source: [COLOMBIA] CONTRALORIA GENERAL DE LA REPUBLICA, ANUARIO DE COMERCIO EXTERIOR.

Coffee prices recovered appreciably in 1941. They were pushed up further during 1944 and 1945 be-

¹ Acknowledgment is made for assistance of Mr. George Lister, American Vice Consul, Bogotá, in the section on coffee.

² Decrees Nos. 2078, 2079, and 2080.

cause of the demands of the growers, who complained of rising costs of production. With United States coffee ceilings unchanged, ordinary exporters were forced to work on a smaller and smaller margin of profit.

The Colombian coffee growers at the end of hostilities in Europe were looking forward optimistically to the reopening of European markets and to strong or rising coffee prices. The degree of Government and Federation control appears unlikely, however, to be relaxed materially. On the contrary, the Federation has been expanding its activities steadily and amassing a large working capital. Some of these funds are used to support other Government agencies or programs, such as the National Supply Institute, which will be discussed later. Other funds are spent, in addition to the support of coffee prices, to maintain coffee-experiment and coffee-demonstration stations, to assist the growers to erect modern dwelling houses, to carry on health campaigns in coffee districts, and for other purposes.

BANANAS

Before the war, bananas ranked as the second export crop of Colombia, but they were much less important than coffee. Prewar exports of bananas were valued at \$4,000,000 or \$5,000,000 per year as compared with \$50,000,000 for coffee. In addition to those exported, much larger, though unknown, amounts of bananas have been produced for local consumption.

The commercial development of the banana industry in Colombia started shortly after the beginning of the present century, but until 1931 the Government took little part in the enterprise. In 1931 a tax of 3 centavos (1.7 cents) per bunch was placed on banana exports. Since 1937 this tax has been collected by a National Banana Inspection, which was instructed to control the quality of exported fruit and to settle controversies on quality and salability of fruit offered to banana purchasers by independent producers.

In 1933, Resolution 4 granted to the banana company controlling the industry the sole right to the use of irrigation water from specified streams for a period of 50 years.

In 1937, Law 1 required that the fruit company provide free medical service to workers. Law 125, of the same year, gave the Government wide powers to regulate the banana industry, prescribe the form of contracts between growers and purchasers, provide credit for growers, control wage rates paid to workers, etc. Later laws and decrees applied these powers in greater detail.

In 1937, however, the banana industry encountered the first of a number of catastrophes, which have lasted to the present time. In that year sigatoka was discovered on the banana plantations. The disease spread rapidly, although it did not greatly affect the total output of fruit for a couple of years. The last year of heavy shipments was 1939, when 8,100,000 bunches (stems of 50 pounds) were shipped. In 1940, shipments dropped to 5,700,000 bunches and in 1941, to 3,400,000. At first the Colombian Government attempted to control sigatoka through its Section of Plant Sanitation. The campaign was unsuccessful, however, and was abandoned early in 1942. Since 1941 the banana zone has been a depressed area, although the Government has tried to relieve economic distress there and to stimulate the production of other crops, with varying degrees of success.

At present, also, the installation of an extensive spraying system to control the disease is being considered. If this is installed, it will mean closer control of production. Bananas will be grown on probably half the original acreage, since the poorer banana lands would not merit the heavy investment and expense of spraying.

RICE

A general assumption with regard to rice, as in the case of cotton, wheat, and some other products, was that restriction of imports and higher prices would lead rather quickly to greater domestic production. Decree 1393, of 1940, set the following quotas for maximum rice imports: 11,000,000 pounds for the second semester of 1940, 18,000,000 pounds for 1941, 9,000,000 pounds for 1942. No imports were to be permitted after 1942, except in case of short crops.

Conditions appeared to be favorable for rice growing in many of the warmer sections of Colombia, and production was increasing at the time these decrees were issued. From approximately 88,000,000 pounds of polished rice in 1939, production rose to an estimated 143,398,000 pounds in 1943. Imports, which had been largely from the Far East, were cut off after the attack on Pearl Harbor and declined from 20,822,000 pounds in 1940 to virtually nothing from 1941 to 1943. In fact, with increased Colombian production, a few hundred tons were exported in 1942 and 1943. In 1944 and 1945, however, with higher consumer income, demand increased appreciably and resulted in imports from Ecuador.

Rice has been a high-priced and an extremely profitable crop in Colombia during the past 2 or 3

years, and this has strongly stimulated production. At the present time, some difference of opinion prevails regarding prospects for the future. Some growers feel that lower prices, when rice from the Far East is available, will reduce profits and limit production. Others believe that Colombia will continue to increase its production of this crop and will add rice to the list of Colombian exports.

WHEAT

Colombian policy with regard to wheat represents an extreme application of the principle of protectionism. Wheat is produced in the cooler regions of Colombia, generally in small patches and by primitive methods. Estimates from unofficial sources place representative labor requirements at 7 or 8 days per acre as compared with some 5 or 6 hours per acre in the United States. Yields are not high, averaging from 9 to 12 bushels per acre.

All wheat grown in Colombia is of a soft type. Different varieties are often badly mixed in the same field, and quality of the resulting crop is generally poor. No doubt varieties can be improved, and in time yields will be increased to some extent. Nevertheless, wheat production is clearly at a great disadvantage in comparison both with that of other countries and with other products, such as potatoes and cattle, in Colombia's wheat-growing regions.

Regardless of these disadvantages, wheat was one of the products to receive stimulation under the 1940 plan for agricultural development. Decree 1440 of 1940 set as the maximum limit for wheat imports 588,000 bushels in 1941, 294,000 bushels in 1942, and none thereafter, except in case of short harvests. The elasticity of domestic supply, however, was overestimated; whereas, on the other hand, the growing demand for wheat bread was underestimated. Consequently, Law 42 of 1942 and Decree 487 of 1943 set aside the earlier restrictions and simply provided that wheat imports should not exceed 588,000 bushels per year.

Decree 487 provided that freight rates on railroads and river lines should be 30 percent less on Colombian than on foreign wheat or flour. This provision, however, was suspended when attention was called to the fact that it was not in keeping with the commercial treaty between Colombia and the United States.

A further provision of Decree 487 appropriated 25 percent of the receipts from import duties on wheat for the support of the National Wheat Growers Federation. The Federation serves primarily as spokesman for wheat growers, though it also has

other duties. It is supposed to purchase, store, and grade wheat and to conduct educational campaigns on the production of wheat and other crops of the cool regions. Most of these other functions have not been fully performed, but the Federation has been quite effective in advancing the interests of the wheat growers. In 1944, it succeeded in obtaining three separate increases in the legal minimum price for wheat. The first of these amounted to 43.8 cents per bushel, the second was 11 cents, and the third was 14.2 cents. They brought the minimum price up to the equivalent of \$3.47 per bushel for medium-grade wheat. The actual price of wheat on the market has been, however, well above the legal minimum. In May 1945, mills were paying the equivalent of \$4.60 per bushel, and bread cost about twice as much per pound as in the United States.

The shortage of wheat in 1944 led to a series of temporary modifications in policy. On August 3, 1944, by Decree 1844, the 588,000-bushel limitation was set aside, because it was declared insufficient under existing conditions. On August 4, by Decree 1875, millers in coastal cities who wanted to obtain import permits were required to agree to grind national wheat up to 60 percent of wheat imported and those in inland cities, to mill as much national as imported wheat.

In September a new turn in policy occurred. Decree 2300 provided for the creation of the National Supply Institute. This agency, among other things, was to be the sole importer of food products. Consequently, the issuance of import licenses for wheat was stopped. Difficulties were encountered in actually organizing the Institute, however, and by the end of the year the supply of wheat became very short. In February 1945 permits were issued for importation of large amounts of flour to make up the shortage.

The wheat policy must be considered largely unsuccessful. According to available statistics (which are subject to considerable error), wheat production has not increased appreciably since 1939, and Colombians have continued to pay high prices for bread. From 1930 through 1938 imports averaged about 661,000 bushels per year. In 1942 and 1943 they declined to 366,000 and 443,000 bushels, respectively. (See table 5.) In 1944 wheat imports amounted to about 769,000 bushels plus 52,000 bushels in the form of flour. Nevertheless, the Five-Year Plan, recently adopted for Colombian agriculture, was drawn up on the assumption that wheat imports would continue to be restricted, and that they would be replaced entirely with Colombian-grown wheat by 1949.

COTTON

During the past 10 years the Colombian cotton-textile industry has expanded rapidly and has sought more and more tariff protection. At the same time, an effort has been made to grow the fiber in Colombia. In 1936, Law 94 raised the import duty on cotton fiber from 2.7 to 3.6 cents per pound. In 1941, the cotton-manufacturing industry, under Law 147, received further protection for the production of yarn.

In 1938, Decree 379 created the National Cotton Board. This agency was empowered to advise the Government regarding means of stimulating cotton production and the issuance of licenses for importation of foreign cotton.

Law 147 of 1941 directed the Government to use all powers at its disposal to assure stability of the cotton-producing and cotton-manufacturing industry. Minimum prices were to be fixed and import quotas set in such a way as to assure full utilization of nationally grown cotton. Contracts were made with manufacturers under which the Government agreed to permit import quotas in return for agreement by the manufacturers to purchase quotas of national cotton. The manufacturers were obliged to deposit funds with the Government as guaranties for fulfillment of their contracts.

Decree 87 of 1943 modified previous regulations and provided that the Ministry of National Economy should perform certain services for the growers. Cotton was to be classed according to standards set up by the Ministry. The Ministry, or its dependencies, were to be the sole distributors of cottonseed, and only specified varieties were to be grown in each zone. These regulations have been fairly well ob-

served, except that there may have been occasional underclassing by purchasers.

Imports of cotton have not declined in recent years as was expected (table 5). Instead there was a rapid increase in the cotton-textile industry. Cotton imports rose from practically nothing in 1928 to 88,000 bales (42,000,000 pounds) in 1942. Meanwhile, imports of textiles dropped from 42,000,000 pounds to 6,000,000 pounds in the same period. Production of lint cotton has varied from 6,300,000 pounds in 1940 to 12,000,000 pounds in 1944. The present tendency is for the crop to increase gradually. Until 1939 practically all cotton imported came from the United States. But by 1941 the United States had practically dropped out of the picture, and its place had been taken by Brazil, Peru, and Haiti.

FATS AND LARD

Prior to 1932 Colombia imported large amounts of lard. From 1928 to 1930 nearly 24,000,000 pounds per year, valued at some \$3,000,000 annually, came from the United States.

In 1932 a regulation by the Department of Hygiene (Resolution 102) set up physical specifications which it was impossible for lard to meet. This was beneficial to a recently established national vegetable-lard industry, which utilized imported copra as its raw material. Lard imports stopped, and the Colombian vegetable-lard factories correspondingly increased their output. Copra imports rose from 1,360,000 pounds in 1932 to over 22,000,000 pounds in 1936. After Pearl Harbor, however, with the copra supply cut off, the vegetable-lard output dropped from 21,000,000 pounds in 1941 to 11,000,000 pounds in 1944.

In 1939 and 1940, when the supply of fats fell seriously short of Colombia's needs, Resolution 102 was ignored. Imports of United States lard in these 2 years amounted to 15,000,000 and 10,000,000 pounds, respectively. Again in 1944, Resolution 102 was set aside temporarily by a series of executive decrees. One of these decrees provided, however, that imports should be suspended whenever the Ministry of Economy decided that the market was sufficiently provided with lard, or if the price of imported lard should threaten the "stability" of the domestic vegetable-lard industry.

In 1936, Law 64 gave the Government authority to reduce the duty on copra from 3.1 cents per pound to 0.8 cent to those companies which agreed to purchase certain specified amounts of domestically produced oil crops. Law 58 of 1944 reaffirmed this authority and also authorized the Government to fix ceiling prices on vegetable lard. Such lard prices

TABLE 5.—Principal agricultural imports¹ into Colombia, 1928-44

Year	Rice (polished)	Wheat	Cotton ²	Textiles	Cacao beans	Copra	Hog lard
	1,000 pounds	1,000 bushels	1,000 bales	1,000 pounds	1,000 pounds	1,000 pounds	1,000 pounds
1928	109,412	1,190	(³)	42,324	16,389	(⁴)	25,609
1929	120,576	1,220	2	41,372	11,687	(⁴)	28,618
1930	108,753	1,200	1	23,281	8,940	(⁴)	23,977
1931	72,300	900	4	25,717	7,566	(⁴)	16,676
1932	32,260	367	6	26,740	3,266	1,360	2,343
1933	21,047	311	10	27,192	4,416	6,435	42
1934	18,100	386	12	25,545	9,414	12,511	84
1935	20,986	483	17	28,043	5,099	16,867	22
1936	26,563	587	12	26,129	9,116	22,505	789
1937	25,635	540	15	29,612	4,116	21,164	130
1938	26,043	583	20	22,112	5,611	12,754	1,960
1939	48,982	1,258	31	27,130	10,062	17,178	15,547
1940	20,822	932	38	13,865	5,763	14,711	10,115
1941	351	687	81	16,063	6,720	19,705	1,250
1942	53	366	88	6,206	5,185	6,422	159
1943	57	443	79	6,215	6,270	1,720	49
1944	71	769	82	(⁴)	9,312	1,109	8,715

¹ Colombian trade returns reported the gross weight of imports during 1928-34 and net weight, except for textiles, during 1935-44.

² Bales of 478 pounds.

³ Less than 500 bales.

⁴ Not available.

are to be determined on the basis of cost at factories, including profits on invested capital at not more than 12 percent.

The loss of foreign copra after Pearl Harbor forced Colombia to stimulate production of oil crops within the country. Cottonseed has provided the greater part of the supply lately, and production has varied from about 10,000,000 to 22,000,000 pounds per year. Production of domestic copra, almost entirely from wild trees, has risen from 3,000,000 pounds in 1941 to a reported 9,000,000 pounds in 1944, though part of this is believed to have originated outside Colombia. An effort has been made to stimulate production of sesame. By means of high prices and publicity campaigns, this crop was built up to a production of 14,000,000 pounds in 1943. But returns proved disappointing to growers, and production declined to 6,000,000 pounds in 1944.

The 5-year plan for agriculture, recently adopted, stated that Colombia could and should replace imports of copra with domestically produced oil crops. In the meantime, however, lard has been selling in Bogotá for the equivalent of 35 cents per pound, wholesale, or 40 cents retail.

CACAO

Cacao has been one of the principal agricultural imports into Colombia. Since this crop is produced domestically under fairly favorable conditions, an effort has been made to stimulate the Colombian output and discourage imports. In 1931, the duty on cacao beans was set at 11.4 cents per pound, and that on ground cacao, at 26.4 cents.

Decree 1748 of 1942 set up the following import quotas:

	Pounds
1942 (remainder of year)-----	3,086,000
1943 -----	6,171,000
1944 -----	4,408,000
1945 -----	2,645,000

After 1945, licenses for imports are to be granted only because of short crops or in case speculation (cornering) affects the cacao supply. Imports are to be suspended whenever the price of national cacao falls below 16.5 cents per pound in the producing regions.

As a further means of stimulating production, the Government has been distributing young cacao trees and disseminating information regarding methods of production. Figures from the Ministry of National Economy, however, show that total consumption (production plus imports) rose from 16,000,000 pounds in 1938 to 24,000,000 pounds in 1943. Imports have continued at about the same rate as in

1930 (table 5), and the increase in national production has been just about enough to keep up with demand. Production is likely to increase for several years from the young trees recently planted. The planting of unselected and low-yielding trees, however, is likely to lead to continued demands for price support.

Prevalence of some diseases, particularly pod rot, and lack of high-yielding varieties are restraining influences on Colombian production. The selection of high-yielding and high-quality trees has been started at the Palmira Experiment Station. Several years will be required, however, before this program can have any material effect on Colombian yields and the cost of production.

SUGAR

Conditions for sugar production are very favorable in many parts of Colombia, particularly in the Cauca Valley, where cane can be cut the year around. Seventy percent of the refined or centrifugal sugar is produced here. Only a small part of Colombian cane is made into white sugar. Almost as much is used to make molasses, chiefly for the manufacture of alcoholic liquors. By far the most important product of cane is panela. This is a brown, loaf sugar, made by boiling the cane juice until it solidifies. Hundreds of little *trapiches*, resembling the "sorghum" mills of farms in Southern United States, are scattered all over the warmer cultivated regions of Colombia for manufacture of panela and molasses.

The sugar industry has received strong tariff protection since 1931, when the import duty was raised to the equivalent of 8.8 cents per pound. In recent years producers of about 95 percent of Colombian white sugar have sold their product through a central sales agency, the *Compañía Distribuidora de Azúcares*, which has branches throughout the country.

In 1943 and early 1944 sugar producers either underestimated demand for sugar or overestimated their crop. Nearly 11,000 short tons were exported. With high consumer income, the demand for sugar proved unexpectedly large. Consequently, about 13,000 short tons had to be imported in 1944 to make up the market deficit. The imported sugar was distributed by the *Compañía Distribuidora de Azúcares* as agent for the Government.

Prices of sugar at wholesale have been held at 12.59 pesos per sack of 50 kilos (6.5 cents per pound) in Bogotá during recent months. Retail ceiling prices have been 14 centavos per libra or half kilo, equivalent to 7.2 cents per pound. The ceilings have not been strictly enforced, however, and prices up to 18 centavos per libra have been quoted.

Agricultural-Policy Agencies

The compilation of a complete and definite list of Colombian agencies concerned with foreign trade in agricultural products is difficult to make. The *Aduana*, or Customs Service, naturally comes to mind at once, but several other agencies also handle some aspects of the foreign-trade policy. As pointed out earlier, the quarantine laws have been used to exclude hog lard and avoid competition of foreign with native production. The *Interventoria de Precios* (Price Control Board) has had some effect on the course of imports and exports during the war. The Caja de Crédito Agrario has served as an importing agency for agricultural supplies and has aided in the stimulation of domestic production. In addition, the Wheat Growers Federation (largely a Government agency) and the Cotton Board have intervened directly in keeping down imports of the crops with which they are concerned. Also, the National Supply Institute was created recently, partly for the purpose of serving as a monopolistic Government agency in importation of food articles.

Since Colombia is deficient in the production of cotton, cacao, fats, wheat, and, part of the time, in rice and sugar, it has had relatively little difficulty in limiting supply and maintaining prices by means of import duties, as already discussed. During the period in which certain crops were protected by import duties, coffee and bananas were burdened by export taxes. In the case of coffee, the export taxes were intended to support programs beneficial to the industry. The tax on bananas, however, was intended simply to obtain Government revenue. In neither case does the production of the crop seem to have been limited appreciably by the taxes.

DEPARTMENTS OF AGRICULTURE AND LIVESTOCK

In nearly all the Colombian programs affecting agriculture and foreign trade in agricultural products, the Minister of National Economy is the central figure. His Ministry contains the Department of Agriculture, Department of Livestock, Department of Irrigation, and the Department of Land and Water, which deals with administration of public domain, colonization, and land tenure. In addition, the Minister is a member of the governing boards of the Caja de Crédito Agrario, Coffee Federation, Wheat Growers Federation, and National Supply Institute.

The Department of Agriculture is almost entirely an agronomic organization. It maintains several

experimental stations, of which those at Palmira, Armero, and La Picota (near Bogotá) are largest and best known. It also carries on an extension program to acquaint farmers with better methods and to induce them to plant more of those crops which the Ministry wants increased for one reason or another. Occasionally, also, figures on "costs" or "profits" on various crops are released. Almost without exception, these figures represent estimates made without field studies to support them.

At the end of 1944, the Colombian Congress adopted an ambitious Five-Year Plan for Agriculture, which contemplates appropriations of some four or five million dollars per year from 1945 to 1949, a total of \$22,100,000. This total was allocated as follows: About \$6,000,000 for experiment stations, \$7,000,000 for extension campaigns, \$1,700,000 for soils studies, \$6,000,000 for plant-disease and pest control, \$500,000 for economic studies, and \$600,000 for an agricultural-engineering section. Even with the more liberal provision of funds by the Plan, progress will be slow for some time in the future.

The Department of Livestock operates 6 livestock-experiment stations, which deal largely with the selection and breeding of cattle, horses, asses, and sheep. There are also 6 smaller stations where breeding animals are raised, partly for sale to livestock producers. In addition, there are 13 *Puestos de Monta* or breeding stations, where bulls, stallions, and boars are kept to provide a free breeding service for the benefit of livestock producers in the neighborhood. Twelve additional *Puestos de Monta* are under construction or are planned.

The Department exercises control over the inspection and sale of serums, conducts pathological investigations, and carries on active campaigns for the introduction of improved breeding animals and the control, or eradication, of animal diseases.

Since Colombia is practically self-contained in livestock production and exports but few cattle, the Livestock Department has played a less active part in regard to foreign trade than has the Department of Agriculture.

THE CAJA DE CRÉDITO AGRARIO, INDUSTRIAL Y MINERO

The Caja de Crédito Agrario, which was founded in 1931, has been the most active and most successful agency of Government intervention in agriculture. At the beginning of 1945 the Agricultural Mortgage Bank was merged with the Caja Agraria, in effect giving Colombia a single, public, agricultural-credit system.

In addition to the credit branches, the Caja has two other important divisions. One of these is the *Provisión Agrícola* section, which sells farm supplies, implements, fertilizer, and seeds through some 105 branches scattered over the agricultural regions. The second division referred to is the *Fomento Agrícola*, or Agricultural Development section. This branch attempts to stimulate new agricultural developments, partly with its own capital of \$285,000, but largely with a loan of \$10,000,000 authorized by the U. S. Export-Import Bank. With these funds the Fomento Agrícola is engaged in development of irrigation projects, is financing fertilizer and lime plants, constructing warehouses for storage of agricultural products, setting up seed-propagation centers, conducting nurseries for propagation of rubber trees, and carrying on a colonization program.

The Caja has been used several times as the agent of the Government in importing food products or rationed articles. It has been the direct purchaser and the distributor of tires during the past couple of years. It has also purchased wheat, sugar, and lard from abroad. In the latter two cases the purchases were made, as a Government agency, without the payment of import duties. The Caja is, therefore, available as an instrument either for intervening directly in foreign trade or for stimulating domestic production.

AGENCIES FOR SPECIFIC CROPS

In addition to such agencies as the Caja Agraria and the Department of Agriculture, which carry on broad agricultural programs, certain of the previously mentioned organizations are concerned with individual crops. The Coffee Growers Federation and the Cotton Board are charged with protecting and stimulating the production of coffee and cotton. Each is a semiofficial agency, and each more or less bespeaks the interests of its respective producer group.

THE NATIONAL SUPPLY INSTITUTE

Decree 2300 of 1944 created the Instituto Nacional de Abastecimientos. This is an action agency with broad powers intended to take over the *Provisión Agrícola* of the Caja, the Wheat Growers Federation, and a few other existing agencies. Its initial capital is to be \$5,700,000, contributed by the Government, the Coffee Federation, Caja Agraria, and *Banco de la República*. It is endowed with most of the legal powers of both a commercial organization and a governmental agency.

The Institute is clearly conceived, primarily, in the interest of agricultural producers. Among its

numerous announced objectives are the following: To stimulate production of grains and other articles of prime necessity; to organize scientific laboratories; to conduct agricultural campaigns and expositions; to educate farmers in improved systems of cultivation and to strive to adapt their activities to the national plan for agricultural development; to protect the interests of farmers by establishing storage warehouses and processing plants; to produce, purchase, and sell fertilizers, seeds, and machinery; to stimulate the cooperative movement among farmers; to classify products for sale and unify weights and measures; to attempt to maintain prices of farm products at levels considered just for the producers and convenient for the consumers.

Potentially, the Institute provides a stronger instrument for Government action than any other now existing in Colombia. According to statements by Government officials, it is intended to be the sole importer of food products but not the chief agency in exporting. Neither is it intended to intervene in the markets continuously in maintaining farm prices. Instead, it is expected to decide upon "satisfactory" prices to farmers and then to buy surpluses, if any should develop, and hold them until it can dispose of them.

The Board of Directors of the Institute is composed of the Minister of Economy, President of the Bogotá Chamber of Commerce, and representatives of the Agricultural Society, the Caja Agraria, Bank of the Republic, and Coffee Growers Federation.

A striking feature of this Institute, which represents producers' interests primarily, is that it is to be given those functions of the Price Control Board which deal with foodstuffs.

Postwar Prospects

What problems will Colombian agriculture encounter after the war, and what policies will the Government follow in attempting to solve them?

In the first place, Colombians, as well as the inhabitants of other countries, are more concerned about their own domestic problems than about the development of foreign trade. A relatively small part of the national production is exported, except for coffee. And only a small part of the goods consumed within the country are imported. The principal exceptions are machinery, automobiles, and chemicals that are not made within the country. To obtain these articles a certain amount of foreign trade will be necessary.

Undoubtedly the thing that is holding back the development of the whole Colombian economy most

seriously is the absence of railroads and highways in many sections and the high cost of transportation—caused largely by the mountainous topography—where such facilities exist. Large imports of construction equipment, trucks, railroad rolling stock, and some airplanes will be needed for the next couple of decades to overcome this deficiency. Colombia will also need farm machinery, fertilizers, automobiles, refrigerators, various semiluxury goods, cotton, fats, and wheat.

How will Colombia pay for these imports? The obvious answer is that payment will be made largely in the form of tropical agricultural products, though the country will also export petroleum and gold. First and most important is coffee, both for the United States and for European markets. After that come bananas. There are opportunities for developing exports of tropical fruits other than bananas, or perhaps of fruit juices for flavoring, and canned-fruit products after transportation difficulties have been overcome. There is also an opportunity to produce sugar in larger volume and more cheaply than at the present time. And there are believed to be opportunities for the development of new crops, such as rotenone-bearing plants, pyrethrum, and perhaps for the exportation of cacao, after high-yielding varieties have been developed. Also, rice production is increasing rapidly, and possibly this crop might be exported after Colombian requirements are met. If this occurs, United States rice growers may encounter somewhat more competition in their foreign markets.

After the requirements of postwar relief have been met, the United States farmer is likely to find that he has large quantities of certain crops for export, such as cotton, wheat, and lard. Can any of these be used to pay for Colombian coffee and bananas? Although Colombian cotton production is slowly ex-

panding, obviously the domestic crop will be inadequate to meet Colombian needs for some time in the future. Whether Colombia buys cotton from the United States or from other countries, however, will depend chiefly on relative prices. With wheat and lard the question depends on Colombian foreign-trade policy. Wheat production has been stimulated by means of high prices and by the exclusion of imports. In the case of lard, the same policy has been followed as with wheat, even though the Colombian vegetable-lard mills in normal times have used imported raw materials. Frankly, no change in Colombian policy regarding these commodities is in sight. In fact, if there should be a marked decline in agricultural prices after the war, there might well be an even stronger demand for the protection of Colombian crops. A broad framework of legislation already exists, and there are Government agencies with ample powers to control imports.

The possibility of severe postwar foreign-trade competition is disturbing many Colombians. Anxiety has been expressed over the future welfare of domestic rice production—promoted by war conditions—when this commodity must compete with world production in the future. Government leaders point out that the State has intervened in the sugar and vegetable-lard industries for a number of years and has thus stimulated and aided these industries.

The opinion of Colombian leaders apparently is that custom duties cannot be lowered substantially and that economic controls cannot be relaxed materially in the postwar period. Unless international agreements should result in a reduction of tariffs and other trade barriers, the Colombian Government probably will continue to control importations, maintain a high exchange rate, and control prices both to prevent deflation and to protect the national interest as visualized in existing policies.

Soil Conservation in the Anglo-Egyptian Sudan

by E. N. CORBYN*

A committee, appointed by the Governor-General of the Anglo-Egyptian Sudan in December 1942 to consider the problem of soil conservation in the Sudan, was charged with the following responsibilities: (1) To report on the situation

in the Sudan with regard to soil erosion and desiccation and the availability of rural water supplies for the human and animal population; (2) to make recommendations with respect to the situation and for any legislative measures or taxation required for carrying out the recommendations; (3) to outline a program of work for a stated period of years for the implementation of the recommendations; and (4) to provide estimates of the cost of such a program and of future maintenance cost involved.

*Formerly Governor of Khartoum.

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The findings of the Committee¹ were on the whole reassuring as to the possibility of there being a "desert creep" of the Sahara southward in the area of the Sudan. A deposit of a great "blanket" of sand was found, from the Sahara southward to about 10°30' N. latitude, which, dating from glacial times, "has been static or fixed for several thousands of years . . . and is everywhere anchored or fixed by vegetation grading from light forest to heskanit (a tough grass) depending on local rainfall . . . Being permeable in structure and fixed in position it prevents erosion from taking place." This sand forms, fortunately, a cultivable soil.

The clay plains south of this great area of "continental" sand, and the clay plains of the major portion of the country in general, do not share the comparative immunity of the sand area from erosion, and their problem is similar to that of other parts of Africa.

The Committee was of the opinion that there had been no great alteration of climate in the direction of desiccation within historic times—say, the last 5,000 years. But it found abundant evidence of alternations of both wet and dry periods in previous geological times. It concluded, therefore, that such desiccation and erosion as have taken place, and are taking place, are the result of activities of human beings and their animals, and can, therefore, be controlled by bringing about changes in these activities sufficient to restore damage and prevent further deterioration.

The Committee's survey of existing conditions in the Sudan showed many serious examples of soil deterioration. Sheet erosion was found to be occurring in many places in the hill country of southern Kordofan and of Equatoria and near the gullied land of the Blue Nile. Gully erosion was noted as common and locally important in Equatoria, along the banks of the Blue Nile, the Dinder and Atbara Rivers, in the hills of Kordofan, and in the coastal range of Red Sea hills. Soil deterioration resulting from overgrazing and overcropping was found to be common in all the thickly populated areas.

Deterioration of forest watersheds due to fires and grazing was observed in the Red Sea hills, in the hills of southern Kordofan and of the southern Fung and eastern Upper Nile districts, and in the hills and mountains of Equatoria, where it sometimes results also from the agricultural development of the heads of valleys.

Spoliation of agricultural land by silt dune formation was found to be taking place in the delta of the

Khor (River) Baraka around Tokar. Spoliation of rain-watered agricultural land by out-of-season fires was noted as common on the clay plains of Kassala, Blue Nile, Upper Nile, and Kordofan.

Finally, town and village peripheries were found to be deteriorating rapidly all over the country, owing to overcultivation and overgrazing of the surrounding areas and excessive cutting of trees for firewood in the neighborhood of towns.

An extensive program of more than 50 items, covering different danger points spread over all the 8 Provinces of the Sudan, was put forward by the Committee, some 30 of which were given a priority classification because of urgency.

The remedies recommended fall under main headings as follows:

(1) Methods of rain- and flood-water control, such as gully plugging, contour terracing, and protection of heads of catchment areas.

(2) Forest protection by means of increased reservation of forest areas, protection from fire, reafforestation, and control of firewood supplies.

(3) Treatment of cultivable rain-watered grasslands by control of annual burning methods and fire protection.

(4) Control of town perimeters, including reservation of areas for the growing and supply of fodder for domestic animals, and for firewood, whether from near or distant sources: control of village planning, so far as necessary to ensure conservation and the best use of the soil of village areas; and control of the grazing habits of nomads, so far as necessary to avoid deterioration in the soil of grazing areas.

Two great merits of the report are that its recommendations apply these remedies to definite schemes at definite places and that financial estimates of the cost of these schemes are given. These are based on a 5-year experimental period and call for an expenditure, totaling in the first instance £300,000, spread over 5 years, to be at the disposal of a board appointed for the purpose.

A considerable number of the Committee's recommendations fall under the heading of improvement of water supplies, a most important matter in so arid a country, and one which in itself will relieve the strain on soil surrounding the water points which already exist in agricultural and grazing areas.

The Sudan Government has accepted the main recommendations of the Committee, and will make the necessary funds available for the 5-year trial period envisaged. It has appointed a Water Supplies and Soil Conservation Board to administer the funds provided and to take executive action on the schemes proposed.

¹ SUDAN GOVERNMENT. REPORT OF THE SOIL CONSERVATION COMMITTEE, 1944. 161 pp. (McCorquodale and Co.) Khartoum. [1945.]

Food and Agriculture in the Trieste Region of Italy

by VICTOR B. SULLAM*

Until a final settlement is reached, the Trieste Region—officially known in Italy as the Compartment of Venezia Giulia—will be partially held by Allied forces. The area, rich in mineral resources, is poor from an agricultural viewpoint. The problems created by the food deficits of Venezia Giulia are relatively large both in peacetime and wartime.

Under a tripartite military agreement,¹ the Trieste Region of Italy will be partially held by Allied troops until a final settlement of boundaries is reached. The region comprises territories gained by Italy from Austria-Hungary after World War I; namely, the Province of Gorizia in the northeastern corner of upper Italy, the Peninsula of Istria, the enclave of Zara on the Dalmatian coast, and a number of isles (Cherso, Lussin, Unie, Cazza, Lagosta, etc.) in the Adriatic Sea. The combined area of Venezia Giulia totals 3,459 square miles, with a population (1936) of 1,001,719 inhabitants. (See fig. 1.) The region, with a mixed population of Italians and Yugoslavs, has long been a center of conflict.

Venezia Giulia plays an important role in the economy of Italy as a source of raw materials. It produces nine-tenths of Italy's total bauxite output, 60 percent of the hard coal, and one-tenth of the mercury. Moreover, the region has important oil refineries—representing one-third of Italy's pre-war capacity—shipyards, and steelworks.

In contrast with such mineral and industrial wealth is the poverty of agricultural resources, which places Venezia Giulia among the least productive compartments of Italy. Although farming is the main single source of employment, with 38 percent of the gainfully employed engaged in agricultural pursuits and about 37 percent of the total population depending upon the land for their livelihood, the region must obtain a large share of its food supplies from outside sources.

The food deficits of Venezia Giulia, which in peacetime are merely a matter of interregional trade, become extremely vexatious in wartime, when the

surpluses of neighboring areas are reduced by war-caused dislocations, transportation is partially disrupted, and military or administrative lines become barriers in the path of normal exchanges of foodstuffs.



FIGURE 1.—Reference map of Trieste Region of Italy.

*Office of Foreign Agricultural Relations.

¹Announced by the State Department on June 9, 1945.

Agriculture

Except for the valley of the Isonzo River in the west, most of Venezia Giulia is mountainous or hilly. Plains comprise less than 4 percent of the total area of the compartment, the remainder being divided between hills (64 percent) and mountains (32 percent).

While the northern portion of the compartment has a continental climate, the whole of Istria is characterized by an irregular distribution of rainfall over the year, with summer precipitation averaging between 3.5 and 5 inches. The soils of Venezia Giulia belong mostly to the Terra Rossa type; both these and the less important Brown soils formed on sandstone are extremely poor from an agricultural viewpoint. Over nine-tenths of the total area is exploited for agricultural and forest production. Of the productive land, about 15 percent is in field and garden crops, 5 percent in vineyards and orchards, 36 percent in pastures and meadows, and 33 percent in woods and forests, and the remaining 11 percent is uncultivated but productive.

About half the arable land is planted to cereals, especially corn and wheat, one-fifth to potatoes, and one-eighth to sown grasses. Industrial crops are altogether negligible, except for some quantities of oriental tobacco and pyrethrum. The Isle of Cherso is Italy's main domestic source of pyrethrum.

Consumption of fertilizer is well below the average both for Northern Italy and for the country as a whole; whereas, by Italian standards, the use of machinery is relatively high.

Animal husbandry is somewhat primitive, most of the cattle being multiple-purpose animals from local breeds. Dairy cows of the Brown Swiss breed are found only in the Province of Gorizia and in suburban areas.

Prewar Food Position

At prewar levels of consumption, Venezia Giulia obtained at least 54 percent of its food (in terms of calories) from outside sources, especially neighboring Veneto. Domestic production yielded only

36 percent of the grain consumption, 52 percent of meats and poultry, and less than half the edible fats and oils. All the sugar and rice and two-thirds of the pulses were obtained from outside the area. Practically the sole food surpluses were early potatoes, fish, and maraschino cherries. (See table 1.)

Food consumption averaged about 2,600 calories per person per day, thus being equal to the national average for the same period. The consumption of individual foodstuffs was, however, at levels markedly different from those obtaining for Italy as a whole. Over 60 percent of the total calories came from bread grains. Consumption of wheat was below the national average, the reverse being true for corn, rye, and rice.

Wartime and Current Food Problems

During the war years, trends in the food production of Venezia Giulia differed but little from those obtaining for the whole of Italy. The grain output in 1943 amounted to about three-fourths of the 1937-39 average, mostly because corn production was severely curtailed. Yet this decline was partially offset by an increase in the extraction rate of flour and a reduction in the amounts of corn and barley used for animal feeding. The production of potatoes was halved and that of pulses reduced to about one-third of normal.

The trend in wheat production is somewhat unique. Over the years 1940-44, the wheat output averaged 95 percent of the 1937-39 levels. This year, when all Italy has harvested one of the poorest crops of the past 25 years and the estimated wheat harvest of Northern Italy is but 65 percent of the 1944 crop, reports for Venezia Giulia are quite favorable, estimates placing production at 93 percent of the 1944 crop.

Until 1942, at least, livestock numbers showed but little variation; however, herds and flocks may have been reduced during the past 3 years as a result of German plundering and guerrilla warfare both be-

tween Nazi-Fascists and Partisans and between different Partisan factions.

TABLE 1.—*The food balance in Venezia Giulia, 1937-39*

Foodstuff	Production ¹	Non-food uses ²	Food obtained from—		Average food consumption ⁴		
			Domestic production	Outside sources ³	Venezia Giulia		All Italy ⁵
					Total	Per capita	Per capita
	100 short tons	100 short tons	100 short tons	100 short tons	100 short tons	Pounds	Pounds
Wheat.....	418	48	369	967	1,336	242.9	391.1
Corn.....	573	127	446	350	796	144.8	70.1
Rye.....	36	3	32	108	140	25.6	7.3
Barley.....	66	32	34	.....	34	6.2	2.2
Rice, paddy.....	.....	.....	.....	134	134	24.5	17.0
All grains in terms of flour ⁶.....	.....	.....	762	295	2,057	374.1	401.9
Pulses.....	68	7	61	123	184	33.5	31.1
Sugar.....	.....	.....	.....	133	133	24.2	17.9
Potatoes.....	2,403	882	1,521	450	1,070	94.7	69.7
Fresh legumes.....	37	.....	37	8	45	8.4	11.0
Fresh vegetables ⁷	541	.....	541	271	812	147.7	160.3
Fruits, inc. grapes.....	204	.....	204	103	307	55.9	67.5
Nuts, unshelled.....	14	.....	14	24	38	6.8	13.4
Dried figs.....	1	.....	1	4	5	.9	3.5
Meat & poultry.....	198	.....	198	140	338	61.5	42.7
Fish.....	154	.....	154	40	114	20.7	14.3
Fats and oils.....	62	.....	62	68	130	23.8	28.7
Cheese.....	7	.....	7	37	44	7.9	12.1
Milk, fluid.....	254	.....	254	51	305	55.3	82.9
Eggs.....	66	.....	66	26	92	16.8	16.3
Total calories per day.....	.....	.....	.....	.....	.....	2,640	2,654

¹ Crop production from official statistics; output of animal products estimated by the Office of Foreign Agricultural Relations.

² Estimates by the Office of Foreign Agricultural Relations.

³ No allowance for food obtained locally from imported feedstuffs.

⁴ Partly based on unpublished material of the Italian Central Institute of Statistics, partly estimated.

⁵ From ANNUARIO STATISTICO ITALIANO, Supplement No. 3, 1944.

⁶ The small amounts of buckwheat and spelt are not included.

⁷ Including family gardens.

Next to the inadequacy of domestic production, the major food-management problem of the area was and still is to ensure fairly equal food supplies to the different population groups. First of all, it was not possible to reduce consumption by producers so that Government regulation of crop disposal permits producers of grains and olive oil to retain for their own use amounts of foodstuffs that are far higher than those made available to urban consumers through the rationing system.

Under such regulations,² a producer and his family are allowed to consume as much as 440 pounds of grain per capita as compared with less than 220

² Confirmed by General Order No. 40 of the Allied Military Government.

pounds received by ration-card holders. Again, an olive grower is allowed to keep as much as 22 pounds of olive oil, whereas the urban consumer receives but one-tenth of that amount. Moreover, over and above the amounts of foodstuffs that the producer is allowed to retain for seed, feed, and family consumption, considerable quantities of grains, meats, fats and oils, and pulses are not delivered to Government agencies for distribution to ration-card holders but are illegally consumed on farms and partly sold on the black market. In 1942-43 about one-fifth of the total grain output was disposed of illegally.

Under the circumstances outlined above, food supplies vary greatly among the different groups of consumers. At one extreme are the 220,000 self-suppliers, who have been able to maintain food consumption at or around prewar levels; at the other extreme are the low-income city dwellers, whose purchasing power on the black market is extremely limited so that their food intake is at near-starvation levels.

The main concern of the Occupying Powers is, of course, for the 900,000 ration-card holders. They include, in addition to the urban population, some farm people who either do not produce staple foodstuffs (truck farmers, casual laborers) or cannot subsist on the output of their tiny holdings. During the consumption year 1945-46, maintenance of the ration levels existing in the rest of Italy may call for movement into Venezia Giulia of some 90,000 tons of wheat, 4,000 tons each of sugar and edible fats, 8,000 tons of pulses, and 3,000 tons of skimmed milk.

Even such comparatively large imports of staple foods will not ensure adequate food supplies for the urban consumers, because domestic supplies of ration-free foodstuffs (potatoes, other vegetables, fruits, etc.) are low and may provide no more than 300 calories per capita per day. Thus, the low-income urban consumer might have to subsist on a daily intake of 1,300 calories—exclusive of black-market supplies—or perhaps one-half the amount available to the farm population. Since most of the Italians are among the low-income city dwellers, the disparity between rural and urban food supplies increases the tension between nationalities. Food imports will therefore be an important factor in maintaining peace and order in this disputed corner of war-ravaged Europe.

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